

Zachary DeFazio

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EDUCATION

Purdue University

*B.S. in **Computer Science** & **Minor in Mathematics***

*Specialization in **Systems Programming** & **Programming Languages***

*GPA - **3.92/4.0***

West Lafayette, Indiana

Graduating May 2025

- Relevant coursework: **Operating Systems**, **Compilers**, **Computer Architecture**, **Analysis of Algorithms**, **Relational Database Systems**, **Programming Languages**, **Linear Algebra**, **Abstract Algebra**
- Clubs: **Launchpad Mentorship Program** (Mentor), **ML@Purdue** (Team Lead), **Algorithm Trading Team** (Project Member)

WORK EXPERIENCE

Raytheon BBN

Software Engineer Intern

Middletown, Rhode Island

May 2024 – August 2024

- Developed **C++** bench-marking framework with **microsecond latency** to measure **Intel oneAPI** libraries
- Utilized **core shielding**, **process affinity**, and other **real-time operating system** tools in Red Hawk Linux 8
- Adapted **OpenCV** drone detection application for mobile devices using **C++** and **Android Studio**

Purdue University

Resident Assistant

West Lafayette, Indiana

Aug 2023 – Current

- Oversee residence hall floor of **60** students and offer support on academic and personal concerns
- Manage budget to coordinate weekly events for the duration of the academic year

Aersys Inc.

Software Engineer Intern

Piscataway, New Jersey

May 2023 – Aug 2023

- Built **WebGL**-based application to design modular **industrial automation** solutions used b
- Designed user-facing interface for **custom configurations** and real-time data in a **3D environment**
- Serialized cost for **AWS** cloud server to reduce storage overhead by **15%** and provide more **detailed metrics**

Morloc LLC

Software Engineer Intern

Sep 2021 – Jun 2022

- Tested prototype cross-language **compiler** for the collaborative **functional programming** language Morloc
- Developed **matrix libraries** in **C++** to create and transform matrices to create **machine learning** library

PROJECTS

Coinbase Market Maker

- Created **C++** trading bot to implement **FIX** protocol and interact with **Coinbase API**
- Utilized **low-latency** programming techniques to reduce overhead and profit from bid-ask spread

Derivative Models

- Wrote **C++** **object-oriented** implementations of different **financial derivative** models to price **options**
- Implemented **binomial trees**, discounted expectation, and **Monte Carlo** simulation for pricing

Functional Language

- Created **functional programming** language with **interpreter** and command line REPL
- Interpreted in **Haskell** and used pattern matching and recursion to parse, build the **AST**, and execute code

GenAI Prompt Enhancer

- Designed Discord bot and **Selenium** scrapper to add movie metadata to **Midjourney image** generation prompts
- Acted as **team lead** for collaboration with other engineers to create project for BoilerMake XI Hackathon

SKILLS

Programming:

Proficient: C, C++, Python, Java, Rust

Basic Understanding: C#, Javascript, Haskell, R

Developer Tools: Git, Jira, Bitbucket, Pandas, PyTorch, Matplotlib, Unity, Make, Docker